# The Evening Sky Map

FREE* EACH MONTH FOR YOU TO EXPLORE, LEARN & ENJOY THE NIGHT SKY

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## SOUTHERN HEMISPHERE
## MAY 2022

## Sky Calendar – May 2022

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2 **Moon near the Pleiades** at 13h UT (19° from Sun, evening sky).

2 **Moon near Mercury** at 16h UT (20° from Sun, evening sky). Mag. 0.9.

3 **Moon near Aldebaran** at 6h UT (evening sky).

5 **Moon at apogee** (farthest from Earth) at 13h UT (distance 405,285km; angular size 29.5').

6 **Eta Aquarid meteor shower peaks**. Most active for 7 days around this date. Associated with Comet Halley. Very fast, bright meteors, up to 40 per hour. Best seen from the tropics and southern hemisphere a few hours before dawn.

9 **First Quarter Moon** at 0:21 UT.

10 **Moon near Regulus** at 0h UT (evening sky).

14 **Moon near Spica** at 2h UT (evening sky).

16 **Full Moon** at 4:15 UT.

16 **Total Eclipse of the Moon** begins at 3:29 UT and ends at 4:54 UT. Mid-eclipse at 4:11 UT. Partial phases begin at 2:28 UT and end at 5:55 UT. During totality the Moon will turn red-orange in color as it passes into the Earth's shadow. Light passing through the Earth's atmosphere scatters into red colors and reflects off the lunar surface. Visible from the Americas, Europe and Africa.

17 **Moon at perigee** (closest to Earth) at 15:29 UT (distance 360,298km; angular size 33.2').

18 **Mars 0.52° SE of Neptune** at 7h UT (62° from Sun, morning sky). Mags. 0.8 and 7.9.

21 **Mercury at inferior conjunction** with the Sun at 19h UT. The innermost planet passes into the morning sky.

22 **Moon near Saturn** at 8h UT (morning sky). Mag. 0.8.

22 **Last Quarter Moon** at 18:43 UT.

25 **Moon, Mars and Jupiter** within a circle of diameter 3.3° at 1h UT (morning sky). Mags. 0.7 and –2.2.

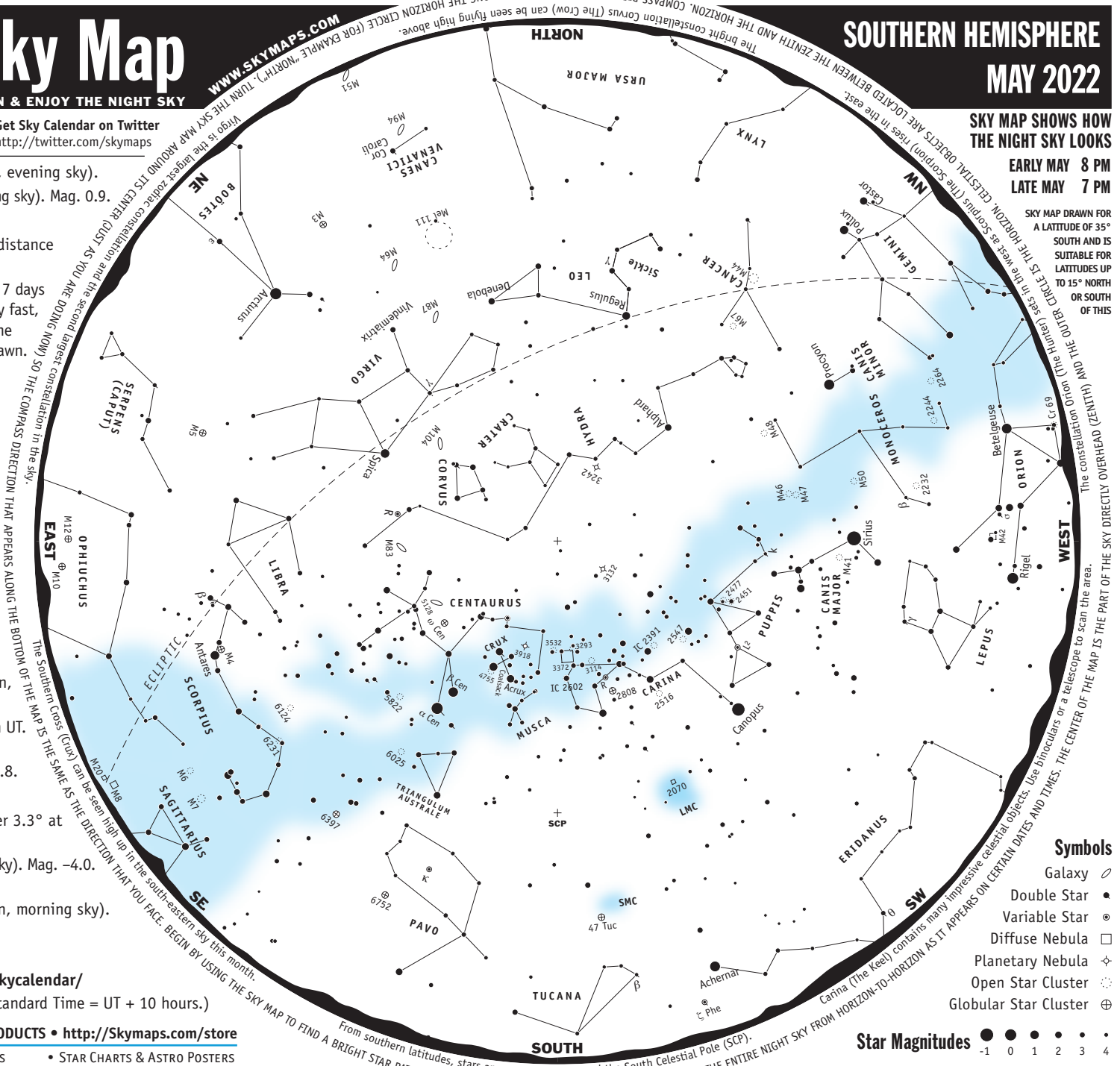
27 **Moon near Venus** at 4h UT (38° from Sun, morning sky). Mag. –4.0. Occultation visible from SE Asia and Indonesia.

29 **Mars 0.58° SE of Jupiter** at 11h UT (65° from Sun, morning sky). Mags. 0.7 and –2.2.

30 **New Moon** at 11:31 UT. Start of lunation 1230.

**More sky events and links at http://Skymaps.com/skycalendar/**

All times in Universal Time (UT). (Australian Eastern Standard Time = UT + 10 hours.)




**SKY MAP SHOWS HOW THE NIGHT SKY LOOKS**

EARLY MAY 8 PM
LATE MAY 7 PM

SKY MAP DRAWN FOR A LATITUDE OF 35° SOUTH AND IS SUITABLE FOR LATITUDES UP TO 15° NORTH OR SOUTH OF THIS

THE SOUTHERN CROSS (CRUX) CAN BE SEEN HIGH UP IN THE SOUTH-EASTERN SKY THIS MONTH. THE DIRECTION THAT YOU FACE. BEGIN BY USING THE SKY MAP TO FIND A BRIGHT STAR PATTERN IN THE SKY.

THE CONSTELLATION ORION (THE HUNTER) SETS IN THE WEST AS SCORPIUS (THE SCORPION) RISES IN THE EAST.

VIRGO IS THE LARGEST ZODIAC CONSTELLATION AND THE SECOND LARGEST CONSTELLATION IN THE SKY.

THE BRIGHT CONSTELLATION CORVUS (THE CROW) CAN BE SEEN FLYING HIGH ABOVE.

FROM SOUTHERN LATITUDES, STARS APPEAR TO ROTATE AROUND THE SOUTH CELESTIAL POLE (SCP).

CARINA (THE KEEL) CONTAINS MANY IMPRESSIVE CELESTIAL OBJECTS. USE BINOCULARS OR A TELESCOPE TO SCAN THE AREA.

THE CONSTELLATION ORION (THE HUNTER) SETS IN THE WEST AS SCORPIUS (THE SCORPION) RISES IN THE EAST. THE OUTER CIRCLE IS THE HORIZON. CELESTIAL OBJECTS ARE LOCATED BETWEEN THE ZENITH AND THE HORIZON. COMPASS DIRECTIONS ARE INDICATED ALONG THE HORIZON CIRCLE (FOR EXAMPLE "NORTH"). TURN THE SKY MAP AROUND ITS CENTER (JUST AS YOU ARE DOING NOW) SO THE COMPASS DIRECTION THAT APPEARS ALONG THE BOTTOM OF THE MAP IS THE SAME AS THE DIRECTION THAT YOU FACE. BEGIN BY USING THE SKY MAP TO FIND A BRIGHT STAR PATTERN IN THE SKY

## About the Celestial Objects

Listed on this page are several of the brighter, more interesting celestial objects visible in the evening sky this month (refer to the monthly sky map). The objects are grouped into three categories. Those that can be easily seen with the naked eye (that is, without optical aid), those easily seen with binoculars, and those requiring a telescope to be appreciated. **Note, all of the objects (except single stars) will appear more impressive when viewed through a telescope or very large binoculars.** They are grouped in this way to highlight objects that can be seen using the optical equipment that may be available to the star gazer.

## Tips for Observing the Night Sky

When observing the night sky, and in particular deep-sky objects such as star clusters, nebulae, and galaxies, it's always best to observe from a dark location. Avoid direct light from street lights and other sources. If possible observe from a dark location away from the light pollution that surrounds many of today's large cities.

You will see more stars after your eyes adapt to the darkness—usually about 10 to 20 minutes after you go outside. Also, if you need to use a torch to view the sky map, cover the light bulb with red cellophane. This will preserve your dark vision.

Finally, even though the Moon is one of the most stunning objects to view through a telescope, its light is so bright that it brightens the sky and makes many of the fainter objects very difficult to see. So try to observe the evening sky on moonless nights around either New Moon or Last Quarter.

## Astronomical Glossary

**Conjunction** – An alignment of two celestial bodies such that they present the least angular separation as viewed from Earth.

**Constellation** – A defined area of the sky containing a star pattern.

**Diffuse Nebula** – A cloud of gas illuminated by nearby stars.

**Double Star** – Two stars that appear close to each other in the sky; either linked by gravity so that they orbit each other (binary star) or lying at different distances from Earth (optical double). Apparent separation of stars is given in seconds of arc (").

**Ecliptic** – The path of the Sun's center on the celestial sphere as seen from Earth.

**Elongation** – The angular separation of two celestial bodies. For Mercury and Venus the greatest elongation occurs when they are at their most angular distance from the Sun as viewed from Earth.

**Galaxy** – A mass of up to several billion stars held together by gravity.

**Globular Star Cluster** – A ball-shaped group of several thousand old stars.

**Light Year (ly)** – The distance a beam of light travels at 300,000 km/sec in one year.

**Magnitude** – The brightness of a celestial object as it appears in the sky.

**Open Star Cluster** – A group of tens or hundreds of relatively young stars.

**Opposition** – When a celestial body is opposite the Sun in the sky.

**Planetary Nebula** – The remnants of a shell of gas blown off by a star.

**Universal Time (UT)** – A time system used by astronomers. Also known as Greenwich Mean Time. Australian Eastern Standard Time (Sydney, Australia) is UT plus 10 hours.

**Variable Star** – A star that changes brightness over a period of time.

# CELESTIAL OBJECTS

SOUTHERN HEMISPHERE

MAY 2022

Skymaps.com

## Easily Seen with the Naked Eye

| | | | |
|---|---|---|---|
| Arcturus | Boo | ● | Orange, giant K star. Name means "bear watcher". Dist=36.7 ly. |
| Sirius | CMa | ● | The brightest star in the sky. Also known as the "Dog Star". Dist=8.6 ly. |
| Procyon | CMi | ● | Greek name meaning "before the dog" - rises before Sirius (northern latitudes). Dist=11.4 ly. |
| Canopus | Car | ● | Second brightest star in the sky. 14,000 times more luminous than the Sun. Dist=309 ly. |
| β Centauri | Cen | ● | With Alpha Centauri, forms the so-called "Pointers-to-the-Cross". Dist=525 ly. |
| α Centauri | Cen | ◙ | Nearest bright star to Sun at 4.4 ly. Brilliant double star in a telescope. 80 year period. |
| Coalsack | Cru | ◆ | Most famous naked-eye dark nebula. Requires dark sky. Dist=600 ly. |
| Castor | Gem | ◙ | Multiple star system with 6 components. 3 stars visible in telescope. Dist=52 ly. |
| Pollux | Gem | ● | With Castor, the twin sons of Leda in classical mythology. Dist=34 ly. |
| Regulus | Leo | ● | Brightest star in Leo. A blue-white star with at least 1 companion. Dist=77 ly. |
| Rigel | Ori | ● | The brightest star in Orion. Blue supergiant star with mag 7 companion. Dist=770 ly. |
| Betelgeuse | Ori | ● | One of the largest red supergiant stars known. Diameter=300 times that of Sun. Dist=430 ly. |
| Antares | Sco | ● | Red, supergiant star. Name means "rival of Mars". Dist=135.9 ly. |
| Spica | Vir | ● | Latin name means "ear of wheat" and shown held in Virgo's left hand. Dist=250 ly. |

## Easily Seen with Binoculars

| | | | |
|---|---|---|---|
| M44 | Cnc | ◌ | Praesepe or Beehive Cluster. Visible to the naked eye. Dist=590±20 ly. |
| M41 | CMa | ◌ | First recorded observation by Aristotle in 325 BC as "cloudy spot". Dist=2,300 ly. |
| 2516 | Car | ◌ | Spectacular open star cluster of 100 stars spaning 1/2 deg. Dist=1,300 ly. |
| 2808 | Car | ⊕ | Located 4 deg W of Nu Carinae. Visible to the naked eye on clear nights. |
| R Carinae | Car | ◉ | Long period variable. Magnitude varies between 3.9 & 10.5 over 309 days. |
| 3114 | Car | ◌ | Stunning open cluster. 30+ stars visible through 7x binoculars. Dist=2,900 ly. |
| 3293 | Car | ◌ | Rich, tightly packed. Surrounded by large, faint nebulosity. Dist=8,500 ly. |
| IC 2602 | Car | ◌ | The "Five of Diamonds". Bright cluster twice diameter of full Moon. Dist=491 ly. |
| 3372 | Car | □ | Eta Carinae Nebula. Enormous glowing cloud in rich star field. Dist=8,000 ly. |
| 3532 | Car | ◌ | Herschel - "most brilliant cluster". 60+ stars in 7x binoculars. Dist=1,300 ly. |
| ω Centauri | Cen | ⊕ | Largest and brightest globular star cluster in sky. 1 million stars. Dist=17,000 ly. |
| Mel 111 | Com | ◌ | Coma Berenices. 80 mag 5-6 stars in 5 deg. Dist=283 ly. Age=400 million years. |
| 4755 | Cru | ◌ | Jewel Box. Outstanding star cluster. Many contrasting colours. Dist=7,600 ly. |
| LMC | Dor | ⌀ | Large Magellanic Cloud. A neighbouring galaxy of the Milky Way. Dist=180,000 ly. |
| M48 | Hya | ◌ | 12+ stars in 7x binoculars. Triangular asterism near centre. Dist=1,990 ly. |
| R Hydrae | Hya | ◉ | Long period variable. Mag varies between 3.0 & 11.0 over 390 days. Brilliant red. |
| $L^2$ | Pup | ◉ | Semi-regular variable. Magnitude varies between 2.6 & 6.2 over 140.42 days. |
| M47 | Pup | ◌ | Bright star cluster. 15+ stars in 7x binoculars. Dist=1,500 ly. |
| M46 | Pup | ◌ | Dist=5,400 ly. Contains planetary NGC 2438 (Mag 11, d=65") - not associated. |
| 2451 | Pup | ◌ | 30+ stars in binoculars. The brightest star, χ Puppis, is red. Dist=850 ly. |
| 2477 | Pup | ◌ | Very rich but distant star cluster (4,200 ly). Resembles globular through binoculars. |
| M4 | Sco | ⊕ | A close globular. May just be visible without optical aid. Dist=7,000 ly. |
| M5 | Ser | ⊕ | Fine globular star cluster. Telescope will reveal individual stars. Dist=25,000 ly. |
| SMC | Tuc | ⌀ | Small Magellanic Cloud. Companion galaxy to Milky Way. Requires dark sky. Dist=210,000 ly. |
| 2547 | Vel | ◌ | Fine open cluster visible through binoculars. Dist=1,300 ly. |
| IC 2391 | Vel | ◌ | Omicron Velorum Cluster. Superb object for binoculars. Dist=450 ly. |

## Telescopic Objects

| | | | |
|---|---|---|---|
| 3918 | Cen | ✧ | The Blue Planetary. Visible in a small telescope as a round blue disk. |
| 5128 | Cen | ⌀ | Bisected by a wide obscuring lane. Strong radio source. Dist=11 million ly. |
| 2070 | Dor | □ | Tarantula Nebula. A bright nebula located in LMC. A star-forming region. |
| 3242 | Hya | ✧ | Ghost of Jupiter. Bright blue disk. Mag 11 central star. Dist=2,600 ly. |
| M83 | Hya | ⌀ | Classic face-on spiral. Discovered in 1752 by Lacaille. In attractive star field. |
| γ Leonis | Leo | ◙ | Superb pair of golden-yellow giant stars. Mags 2.2 & 3.5. Orbit=600 years. Sep=4.4". |
| 5822 | Lup | ◌ | Large, attractive cluster. Dist=1,800 ly. Open cluster NGC 5823 to the south. |
| k Puppis | Pup | ◙ | Telescope easily shows two blue-white stars of almost equal brightness. Sep=9.9". |
| 6124 | Sco | ◌ | Contains 5 bright tightly packed stars near centre. 7 star chain. Dist=1,600 ly. |
| 3132 | Vel | ✧ | One of the brightest planetaries. Magnitude 10 central star. Dist=2,600 ly. |
| M87 | Vir | ⌀ | Supergiant galaxy with supermassive black hole at its core. Dist=53.5 million ly. |
| M104 | Vir | ⌀ | Sombrero Galaxy. Almost edge-on spiral galaxy. Protruding central core. |
| γ Virginis | Vir | ◙ | Superb pair of mag 3.5 yellow-white stars. Orbit=169 years. At their closest in 2005. |

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